

# Claims

- [c1] A vision system for a vehicle comprising:  
a light source generating an illumination beam;  
a first receiver generating an image signal in response to at least a reflected portion of said illumination beam;  
a transmission sensor generating a transmission signal;  
and  
a controller coupled to said light source, said first receiver, and said transmission sensor and enabling activation of said light source in response to said transmission signal.
- [c2] A system as in claim 1 wherein said controller enables activation of said light source and said first receiver when said transmission signal signifies that a transmission of the vehicle is in a forward mode.
- [c3] A system as in claim 1 wherein said controller disables activation of said light source when said transmission signal signifies that a transmission of the vehicle is in a mode selected from a reverse mode, a neutral mode, and a park mode.
- [c4] A system as in claim 1 further comprising a vehicle

speed sensor generating a vehicle speed signal, said controller enabling said light source in response to said vehicle speed signal.

- [c5] A system as in claim 4 wherein said controller operates said light source at a minimum current level when said vehicle speed signal is approximately equal to zero.
- [c6] A system as in claim 4 wherein said controller increases operating current of said light source as said vehicle speed signal increases from approximately zero to approximately 20mph.
- [c7] A system as in claim 4 wherein said controller operates said light source at a maximum current level when said vehicle speed signal is greater than approximately 20mph.
- [c8] A system as in claim 1 further comprising a headlamp sensor generating a headlamp signal, said controller enabling activation of said light source in response to said headlamp signal.
- [c9] A system as in claim 1 wherein said headlamp sensor in generating said headlamp signal detects operating current of at least one headlamp of the vehicle.
- [c10] A system as in claim 1 further comprising an exterior il-

lumination sensor sensing illumination levels exterior to the vehicle and generating an exterior illumination signal, said controller enabling activation of said light source in response to said exterior illumination signal.

[c11] A system as in claim 10 wherein said controller enables activation of said light source when the illumination signal is below a predetermined level.

[c12] A system as in claim 1 further comprising:  
a thermal sensor coupled to said light source and generating a first temperature signal; and  
a thermal heater coupled to at least a portion of said light source;  
said controller coupled to said thermal sensor and said thermal heater, maintaining temperature of at least a portion of said light source, and enabling activation of said light source in response to said first temperature signal.

[c13] A system as in claim 12 further comprising an ambient sensor generating a second temperature signal, said controller coupled to said ambient sensor and adjusting output of said thermal heater in response to said second temperature signal.

[c14] A system as in claim 12 further comprising a heat sink

coupled to said light source, said controller maintaining temperature of at least a portion of said heat sink in response to said first temperature signal.

- [c15] A system as in claim 1 further comprising a thermal heater coupled to said light source, said controller coupled to said thermal heater and preheating at least a portion of said light source before enabling activation of said light source.
- [c16] A system as in claim 1 further comprising a thermal heater coupled to said light source, said controller coupled to said thermal heater and preheating at least a portion of said light source before enabling activation of an ignition system of the vehicle.
- [c17] A system as in claim 1 further comprising:  
a transmitter generating an activation signal; and  
a second receiver receiving said activation signal;  
said controller coupled to said receiver and enabling activation of said light source in response to said activation signal.
- [c18] A system as in claim 16 wherein said transmitter is a transmitter selected from at least one of a cellular phone, a keyfob, an active transmitter, a passive transmitter.

[c19] A vision system for a vehicle comprising:  
a light source generating an illumination beam;  
a receiver generating an image signal in response to at least a reflected portion of said illumination beam;  
a transmission sensor generating a transmission signal;  
a vehicle speed sensor generating a vehicle speed signal;  
a headlamp sensor generating a headlamp signal;  
an exterior illumination sensor sensing illumination levels exterior to the vehicle and generating an exterior illumination signal; and  
a controller coupled to said light source, said receiver, said transmission sensor, said vehicle speed sensor, said headlamp sensor, and said exterior illumination sensor and enabling activation of said light source and said receiver in response to said transmission signal, said vehicle speed signal, said headlamp signal, and said exterior illumination signal.

[c20] A method of operating a vision system of a vehicle comprising:  
generating an illumination beam;  
generating an image signal in response to at least a reflected portion of said illumination beam;  
generating a transmission signal; and  
enabling activation of said light source in response to said transmission signal.

